AM60E DISHWASHER

INSTALLATION AND OPERATION INSTRUCTION

HOBART

HOBART FOOD EQUIPMENT CO.,LTD

FORM 7153069XE

V1.2 2013.01

CONTENT

GENERAL ……2

INSTALLATION……4

Unpacking……4

Proper place……4

Conversion ……6

Electrical Connection……6

Plumbing Connection……9

OPERATION……12

Opening……12

Warm-up…… 12

Preparations ……13

Washing……14

Cycle selecting……14

Cleaning……15

MAINTENANCE……17

TROUBLESHOOTING……18

SERVICE……19

Installation, operation and maintenance of AM60E dishwasher

Please save these instructions

GENERAL

The AM60E dishwashers are semi-automatic machines. Special design of three doors，which can be simultaneously opened，allow the rack to be pushed in and out. Unique incorporate wash arms of washing and rinse system, improve efficiently overall property of machines, installation, removing and washing of wash arms may become more easily.

AM60E dishwashers can fill automatically and two kind of wash time can be selected. When doors of AM60E dishwashers are opened, machines are stopped immediately. When water level of tanks is normal, open the door to push the rack in, then closed the door，an automatic wash and rinse cycles begins. If machines are short of water，close the door，machines can fill automatically. When water level is normal, an automatic wash and rinse cycle begins.

Electrical booster heat options (6KW and 12KW, please explain clearly before order) include a sealed booster or an open booster tank. In Addition, Dish table heights may be specified at time of order for 800mm (31.5 inches) or 860mm (33.875 inches).

Basic parameter:

Wash cycle(s)	60/90
Wash capability (rack/hour)	60
rack dimension(mm)	500×500
Door opening height (mm)	420
Dimension (width-depth-height)(mm)	695×701×1440
Wash pump power(KW)	0.73
Tank electric heat power(KW)	2
Booster electric heat power(KW)	6 or12(options)
Tank capacitance (L)	20
Water consumption (L/rack)	3.0
Machine weight(Kg)	130

INSTALLATIONS

Unpacking

Immediately after unpacking, check for possible shipping damage. If the dishwasher is found to be damaged, save the package materials and contact the carrier within 15 days of delivery. Please take out parts of scene installation (overflow pipe, vent cover), manuals and maintenance card. Please fill out necessary information carefully.

Before installation, check the electrical service to be sure it agrees with the electrical specifications on the data plate located on the right side of machines. Circuit diagram located backside of panel-front.

Location

Place the dishwasher in its operating location. Turn the leveling feet as required to level the machine and adjust to the desired height. Before finalizing the location, make sure that consideration has been given for the electrical conduit, water supply, drain connection, gas booster location (if applicable),tabling, chemical feeder replenishment(if applicable),daily cleaning, maintenance and adequate clearance for opening the doors(Fig.1)

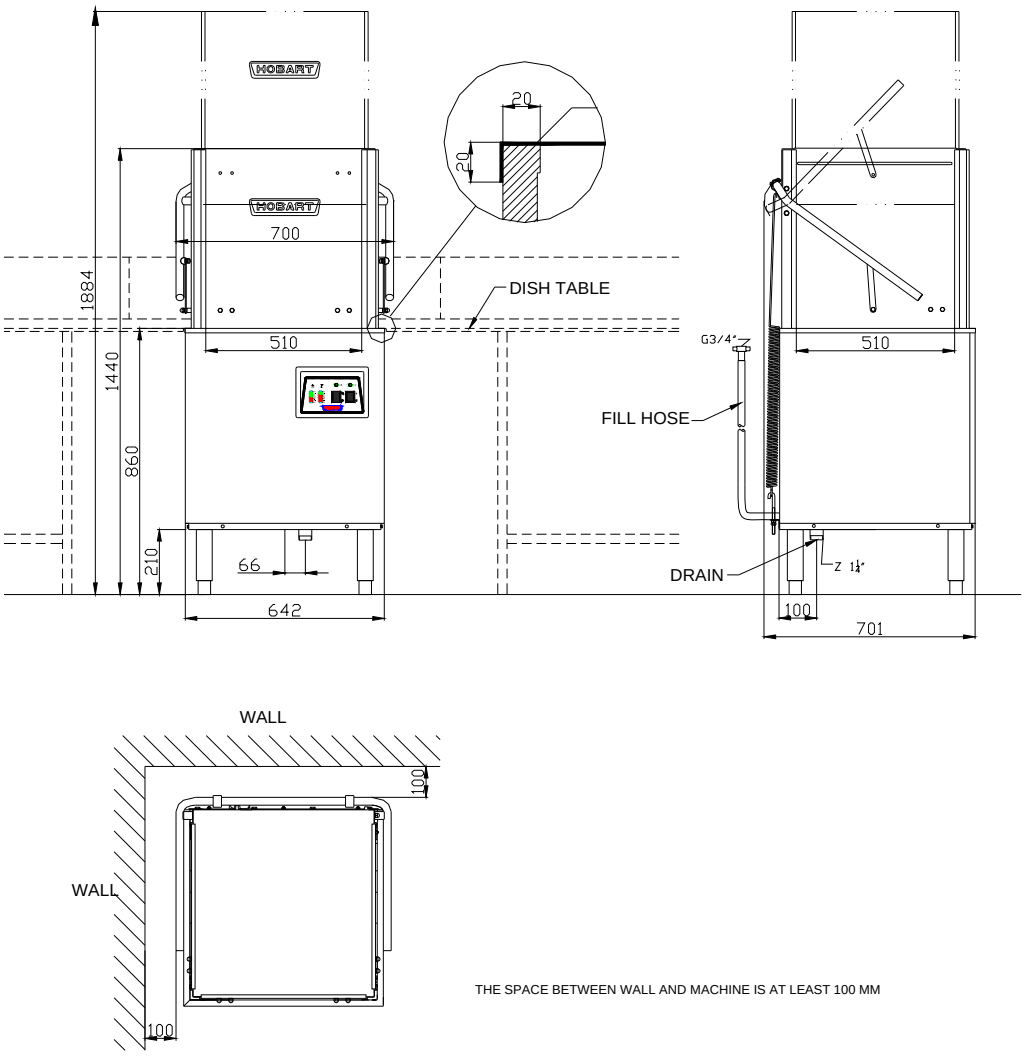


Fig.1

Notes: The dishwasher must be level before any connections of circuit, inlet piping and drain piping are made.

Dish table should be turned down and fitted into the dishwasher (Fig.2). Use a suitable sealer between table and tank lip to prevent leakage.

A hood or vent may be required in order to meet local codes. The ventilation volume should be more than 2.8m^3/min in case of using hood or vent (supplied by others).

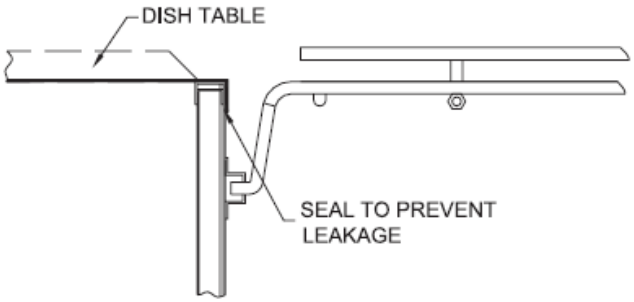


Fig. 2

Convert From Straight-Through To Corner Operation

For corner operation, remove the rack guide and baffle (Fig.3) from the front. Re-install the rack guide on the side and use screws to re-install the baffle in the front.

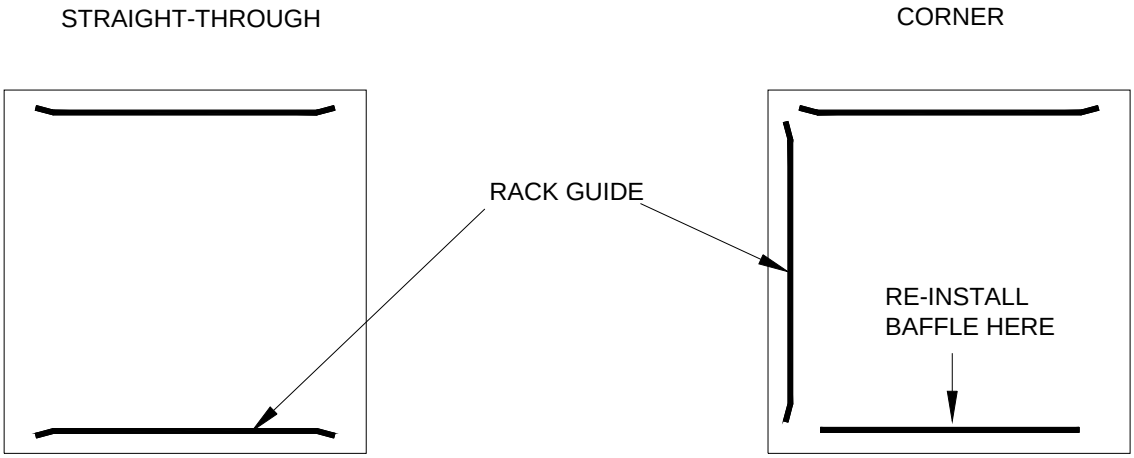


Fig.3

Electrical Connections

Electrical Data

Volts/Hz/ Ph	No booster	6KW Electrical booster	12KW Electrical booster
	Min. Circuit Ampacity/ Max. Protective device	Min. Circuit Ampacity/ Max. Protective device	Min. Circuit Ampacity/ Max. Protective device
	AMPS	AMPS	AMPS
220/50/1	25		
220/60/1	25		
200/50/3	15	45	75
200/60/3	15	45	75
220/50/3	15	41	69
220/60/3	15	41	69
380/60/3	10	15	24
380-415/50/3	10	15	24

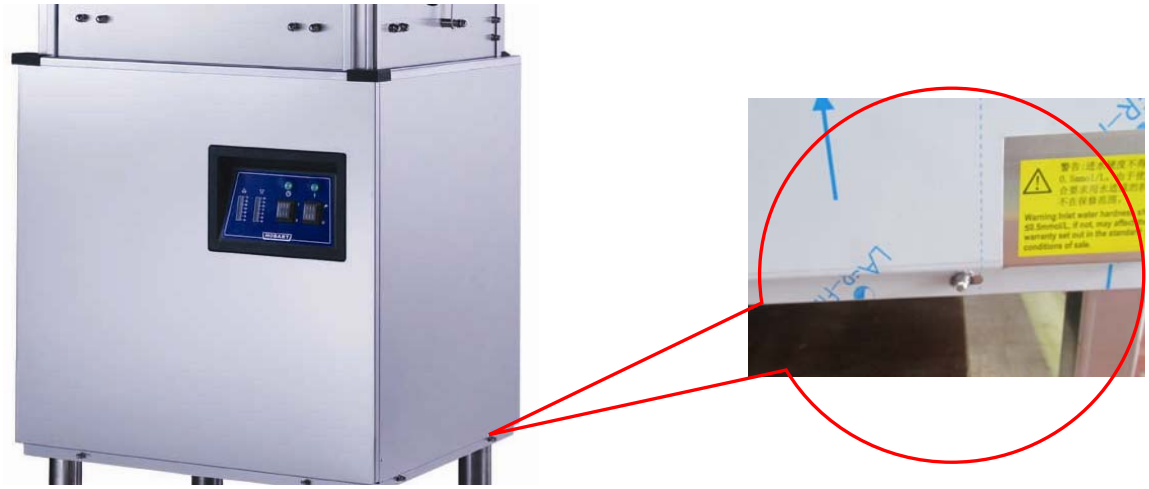
WARNING：Electrical and grounding connections must comply with applicable portions of the national electrical code and/or other local codes.

WARNING: A fused disconnects or circuit breaker with electrical leaking protector (not supplied) must be installed in the electrical line supplying the dishwasher and should meet the requirements of your local electrical code.

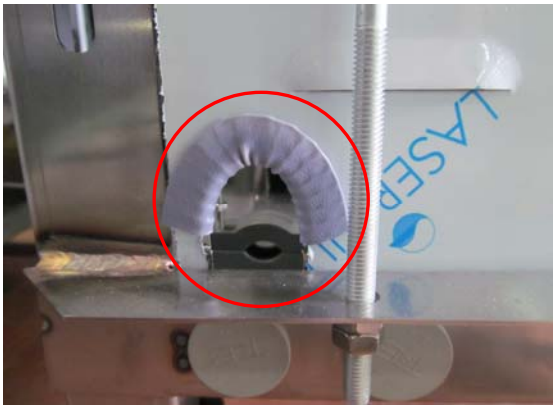
WARNING: Disconnect the electrical power supply and place a tag at the disconnect switch indicating that you are working on the circuit.

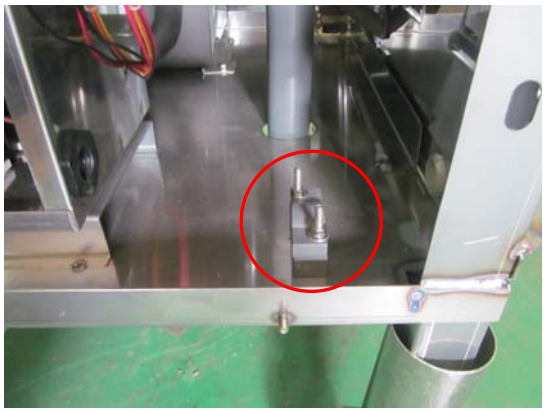
Power supply (If power cable is not supplied with machine)

Remove the side panel.

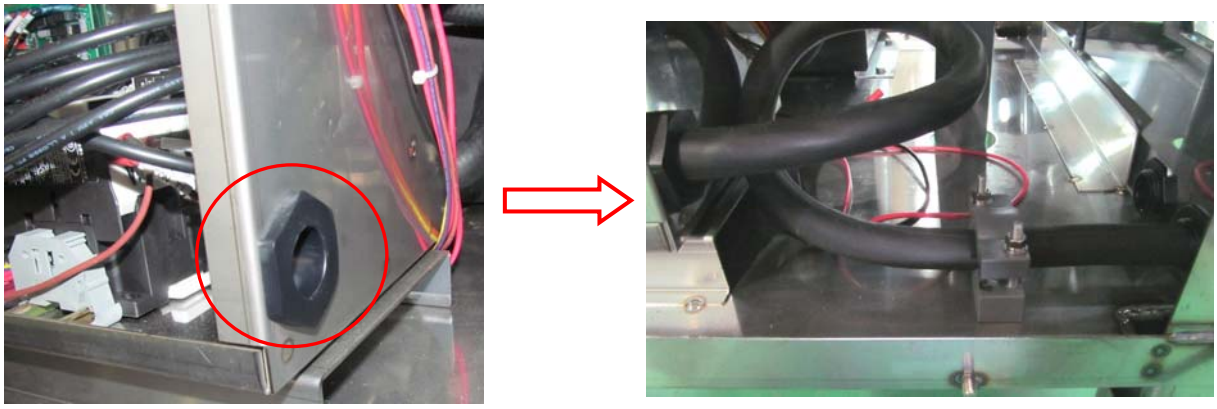


Let the power cable thread the wiring hole on the bear panel. And fix the cable via the cable clip.

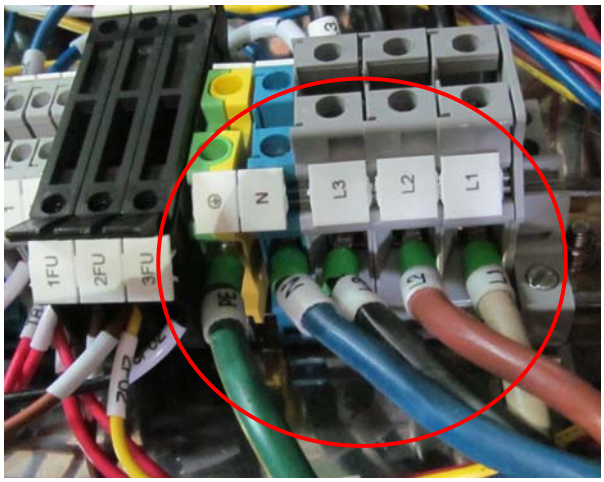




Let the cable thread the cable bushing, and strip the cable if necessary.



Connect the power cable to terminals on the control board according to the picture.



Please install leakage protection switch. The horizontal distance between power switch and one side of machine is about 0.5m. The height of power switch is about 1.7m. Five-line cable is prepared for AM60E dishwashers. Refer to the electrical diagram on the side of side panel. Connect the electrical supply wires with different colors to terminal block(Fig.4).

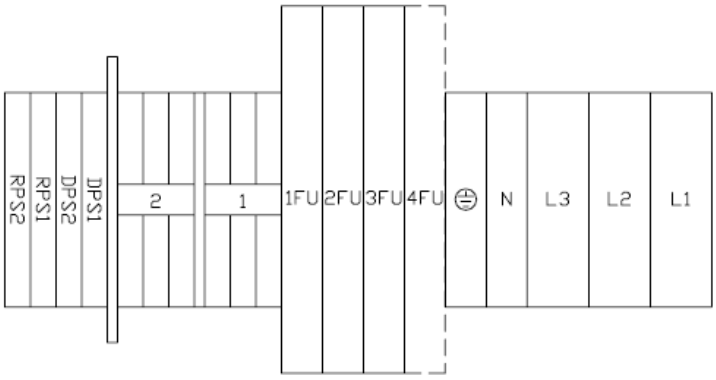


Fig.4

Plumbing Connections

Water supply

Warning: Plumbing connections must comply with applicable sanitary, safety and plumbing codes.

Please install 3/4” valve in the range of 1m to machines. Connect the Water pipe to the incoming water supply (3/4”).The water supplied hardness should be ≤

Incoming water temperature requirements

	Temperature	
	C	F
With 6KW Electrical Booster	55 ~ 60	131 ~ 140
With 12KW Electrical Booster	25 ~ 60	77 ~ 140

Incoming water pressure requirements

	Pressure(dynamic)	
	M Pa	Kg/cm^2
Standard machines	0.1-0.6	1-6
With rinse pump	0.05-0.6	0.5-6

0.5mmol/L. If hardness exceed limit, please increase softening system to make sure machine can operate normally.

Note: The water hardness should be ≤0.5mmol/L. If not, water softener is strongly recommended. Or else, may affect the warranty set out in the standard condition of sale.

Note: In case of line dynamic pressure less than 0.098MPa on sealed booster machine; or line dynamic pressure less than 0.049MPa on open booster machine，a pressure-pump must be installed (by others); in case of line static pressure more than 0.784MPa，a pressure reducer must be installed (by others).

Drain

Connect the **1**1/4” NPT drain connector under the wash tank to a suitable drain. If a grease trap is required by code, it should have a minimum flow capacity of 95.5 liters per minute (21 gallons per minute).

Power supply for detergent dispenser and/or rinse sanitizer feeder (by others)

Terminals DSP1 and DSP2 in the control box allow connection of detergent dispenser (by others). RPS1 and RPS2 terminal allow connections of a rinse sanitizer feeder (by others) with maximum current of 3 Amps (Fig.4). DSP1-DSP2 is powered during the wash cycle. RPS1-RPS2 is powered during the rinse cycle. Refer to the electrical diagram on the side of side panel.

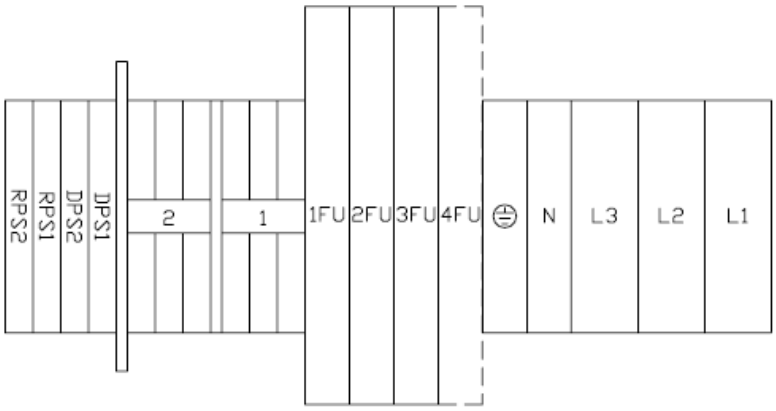


Fig.4

Notes: The move of control box must be considered during wire connection and provide extrusions of wire.

Notes: Please use insulated jacket wire above 600 Volts and do not use wire of light and electric ring.

Rinse Agent Connection

Remove front panel to locate rinse agent connection points. Two connecting points for rinse agent are provided. In sealed booster machine, one is located at the upper front side of booster and allows rinse agent to inject into the booster tank. Another is located booster outlet pipe upper the booster tank and allows rinse agent to inject into the rinse pipe (Fig. 5a). In open booster machine, one is located at the upper right side of booster and allows rinse agent to inject into the booster tank. Another is located rinse pump outlet pipe and allows rinse agent to inject into the rinse pipe (Fig. 5b). Select a suitable point according to the chemical requirement. Use a spanner to loosen the plug and connect rinse agent pipe with a suitable sealing material.

Parts installation

After installation, please install strainer and overflow pipe (Fig.6)

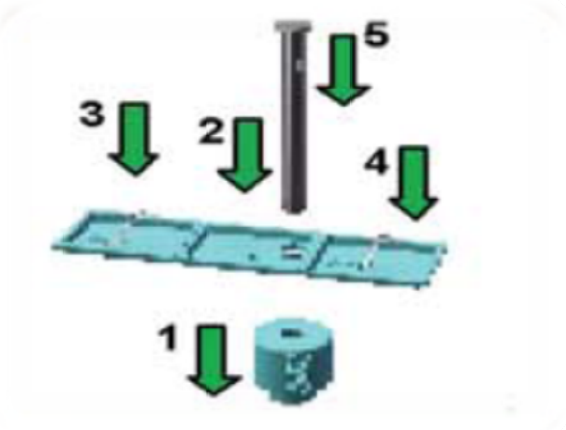
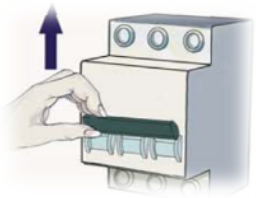
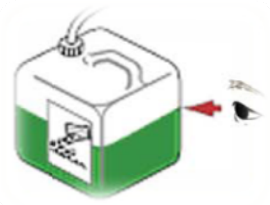
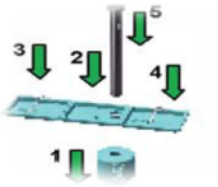


Fig.6

OPERATION

1. Opening

1). Open valve, push switch, check detergent and sanitizer and check installation of strainer and drain pipe.

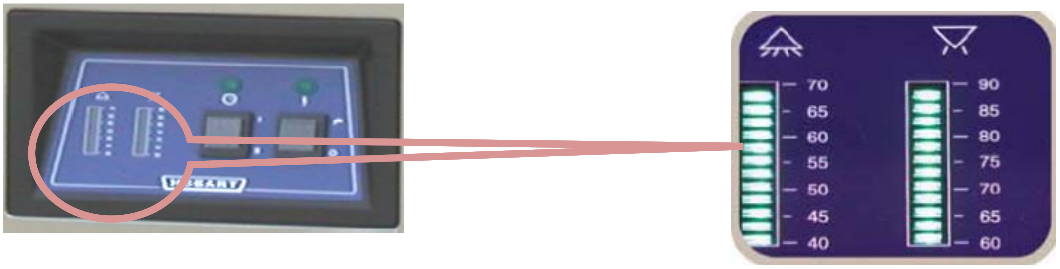




2). Close the door, turn the power on and indicator begins to shine.

2. Warm-up

Machine automatically fill and heat. When the temperature reaches 70℃°and 82℃°, machine begins to standby mode.

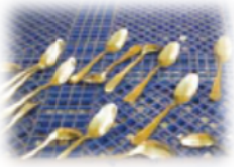
Thermometer: left thermometer express temperature of wash tank, and right thermometer express rinse water.



3. Preparations

1) Scrape the dishes to remove large particles of food and debris and marinate in the water.

2) Preparation



Warning: If dishes are placed incorrectly, dishes may be not washed cleanly.

4. Washing

Open the door, push the rack in, and then close the door. Machine begins to work. Washing → stop → rinse. After rinse, open the door, push dishes out, and then take out dishes.

‹ in

ıking out

Warning: please cut off power, wait 10 seconds, make wash arm stop to make sure not to scald others if you want to push in dishes after washing cycle.

5. Cycle Selecting

Select time according to dirtiness of dishes. "Ⅰ"-60s wash cycle, "Ⅱ"-90s wash cycle.

Working cycle data

Working cycle(s)	60	90
Wash time(s)	42	72
Pause time(s)	4	4
Rinse time(s)	14	14

Drain: Lift the standpipe to drain the wash tank

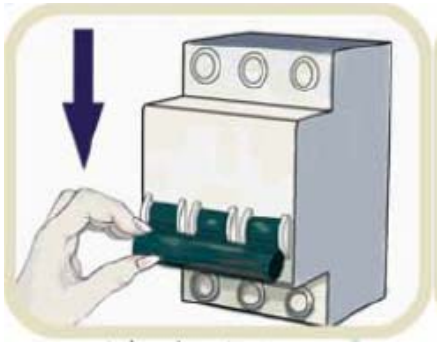
6. Cleaning

Warning: Never hose down the outside of the dishwasher

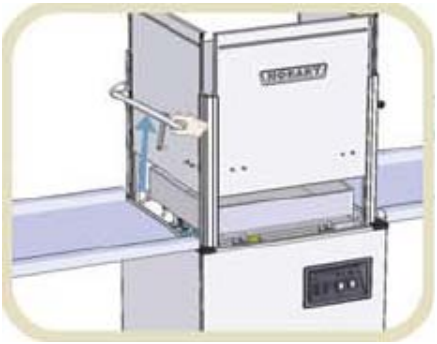
It is recommended that the machine be thoroughly cleaned at the end of each working shift or at least daily.

The procedures of machine cleaning as follow:

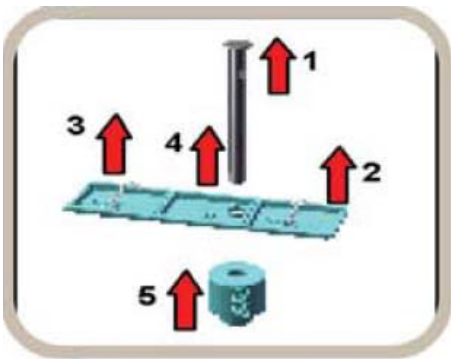
1) Turn off power.

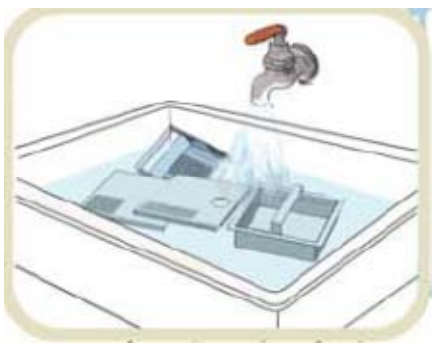


2) Close inlet valve and open the door.

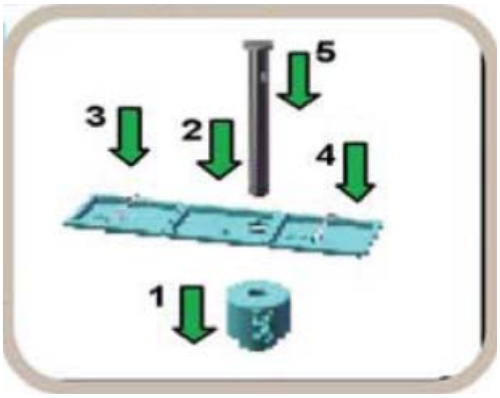


3) Clean off the dish table into the dishwasher. Lift the standpipe to drain the wash tank. Remove and empty the strainer basket and pump intake screen, wash and rinse them thoroughly. Thoroughly clean and flush the dishwasher interior.





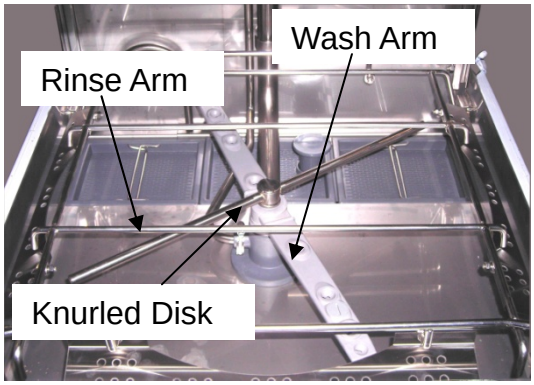
4) Replace intake screen and strainer basket. Leave the doors open to allow the interior to dry.



MAINTENANCE

Warning: Disconnect electrical power supply and place a tag at the disconnect switch indicating that the circuit is being worked on before any maintenance procedure.

Wash arms



Upper and lower wash/rinse arms should turn freely and continue turning for a while after being whirled by hand. To check arms, DISCONNECT ELECTRICAL POWER SUPPLY, rotate arms, and remove any obstructions causing improper operation.

If the strainer pans or pump intake screen is not properly in place, obstructions (such as food particles or bones) may clog the wash arm nozzles. The wash arms are easily removed for cleaning.

WARNING: There may be hot water in the wash/rinse arms, please wait at least 5 minutes after turning off the machine before removing the wash arms.

To remove the arms, unscrew the knurled disk on the arms and take them out. Upper and lower arms are interchangeable.

TROUBLESHOOTING

This section may help you avoid a service call. However, if a symptom persists after the possible causes have been checked, please contact HOBART local service departments.

SYMPTOM	POSSIBLE CAUSES/SUGGESTED ACTIONS
No machine operation	● Open doors and hold for 2 seconds, close it again ● Blown fuse or tripped circuit breaker at power supply ● Blown fuse FU3 at control circuit
Long wash cycle	● Water temperature in booster is too low. Warm-up time was not enough. Check thermostats and heaters.
Dishes not clean	● Insufficient water circulation due to obstruction at pump intake screen. Disconnect power supply, drain wash tank and check. ● Incorrect water temperature. Insufficient warm-up time. Check circuit breaker, thermostat and heater. ● Incorrect detergent dispensing. Contact your detergent representative. ● Excessive mineral deposits through wash and rinse system. Deliming may be necessary.
Spotting silverware, glasses, and dishes	● Improperly loaded racks. ● Incorrect rinse water temperature. ● Loss of water pressure due to pump obstruction. ● Excessively hardness of water. ● Incorrect detergent for water type. ● Incorrect rinse additive for water type. ● Incorrect concentration of detergent, rinse additive and/or sanitizer.
Inadequate rinse	● Dirty line strainer causing reduced water flow. Turn off water supply, disconnect water supply pipe and solenoid valve, withdraw and clean screen. Reassemble. ● Low supply line pressure

SYMPTOM	POSSIBLE CAUSES/SUGGESTED ACTIONS
Leaking valve	● Foreign material preventing proper valve operation. Note: a critical period is soon after installation when pipe compound or metal shavings may lodge at the valve seat. Shut off supply line. Unscrew and lift bonnet from valve body. Clean valve and reassemble ● If a solenoid valve is malfunctioning, it is recommended that you contact Service
No or slow fill	● Dirty line strainer causing reduced water flow. Turn off water supply, disconnect water supply pipe and solenoid valve, withdraw and clean screen. Reassemble ● Low supply line pressure

Service

Contact your local Hobart-authorized service office for any repairs or adjustments needed on this equipment.

As continued product improvement is a policy of HOBART, specifications are subject to change without notice.

CE Certification

amtri veritas

Certificate of Conformity

Voluntary Examination against the Machinery Directive 2006/42/EC issued to:

Hobart Food Equipment Co., Ltd

No. 8 Yesheng Road, Xiqing Economic & Development Zone, Tianjin, China

in respect of machinery manufactured by:

Hobart Food Equipment Co., Ltd
No. 8 Yesheng Road, Xiqing Economic & Development Zone, Tianjin, China

Machine Type: **AM60E** Commercial Dishwashers
Model numbers: **AM60E Series**
Sample Machines: **AM60E** serial number **2110120001**

amtri veritas certifies that the technical file relating to the machinery mentioned above contains all the necessary information.

amtri veritas is satisfied that, having examined and performed such tests as have been considered appropriate on the sample machinery, the sample machinery is representative of the range(s) mentioned above, and has been manufactured in conformity with the technical file and that the standards or transposed harmonised standards, as the case may be, if used, have been properly applied and that the sample complies with the relevant essential health and safety requirements.

amtri veritas confirms that it accepts that the company has chosen to address the Low Voltage Directive 2006/95/EC via compliance with EN 60335-2-58, and the EMC Directive 2004/108/EC via compliance with EN 55014-1, EN 55014-2, EN 61000-3-2, EN 61000-3-11 and EN 62233.

Certificate Number: AVEX3287-A

Issue Date: 24 January 2011

Expiry Date: 23 January 2016

for **amtri veritas** .....
Elthe Beun, Managing Director

CE
Registration Number
0463

amtri veritas, hulley road, macclesfield, cheshire, sk10 2ne, england

Certification is subject to compliance with contractual agreements and terms and conditions.
Any unauthorised modifications to this machinery will invalidate this certificate.
AVVEXP1.3

Dishwasher Maintenance

For AMX/AM900 H502L/E502L AM50E/AM60E

	Clean machine(Customer)	
	Items	**Content**
1	Tank flat strainer	Visual inspection & cleaning
2	Wash tank housing	Visual inspection (lime deposits etc.)
3	Wash & rinse arms	Removing & cleaning of upper and lower wash arms. Tighten screws when installing.
4	Overflow & Tank strainer	Check overflow tube in right place
5	Milled nut	Check wash arm milled nut before operation, and tight it.

	Machine inspection (Service)	**Machine maintenance after 0.5 year or 20 000 cycles. The maintenance must be carried out by authorized service technicians.**	
	Component	**Inspection**	**Machine Type**
1	General condition (first impression)	- Visual control, condition	All
2	Machine tightness	- Visual control, become less crowded	All
3	Fill hose, fill valve & air gap system	- condition and function	All
4	Water level wash tank, air chamber	- Condition & function due to visual control - Check soil level inside air chamber	AMX/AM900
5	Pressure transmitter, pressure hose	- Check soil level inside air chamber - Condition & function due to visual control - Check sealing of pressure hose	All
6	Booster, rinse pump, rinse manifold	- Condition & function due to visual control - Tightness - Check Booster water level using routine S56 (Service manual)	AMX/AM900
7	Wash & rinse arms	- Check wash & rinse arm spinning - Removing & cleaning of upper and lower rinse and wash arms - Visual inspection of abrasion and lime deposits of wash & rinse arms, replace it when necessary.	All
8	Wash arm bearing, sliding ring and milled nut	- Visual inspection of abrasion and lime deposits of wash arm bearing sliding ring and milled nut, replace it when necessary. Hxle-wash arm(00-883452-001), milled nut(7159006-6), gasket(00-775933-003).	All
9	Wash arm washer	- Visual inspection of abrasion, warping and deformation of wash arm washer, replace it. Teflon washer(00-774072-001/002, 00-774072-007).	All
10	Safety equipment: hood end switch	- Check function	All
11	Bosster and tank heating elements	- Condition, fuction and tightness	All
12	Door & Hoodlift	- Operating noise (rolls) - Adujstment of the hood in standby position - Visual control, condition, tightness - Function check - Function, check door slide bearing, doorstop damper, replace it when necessary.	AMX/AM900 AM50E/60E
13	Door mechanism clamping force	- Check clamping force	AMX/AM900 AM60E
14	Bow	- Function, check bow bearing	AMX/AM900
15	Tighness of top cover / BAE	- Visual inspection: tightness top cover and BAE - Humidity in BAE, if necessary replace and change seal top cover	AMX/AM900 H(E)502L(P)
16	Machine control unit, contactor, fuses & touch panel	- Check condition and function, if necessary test run	All
17	Control unit & circuit board: _____ number of cycles	- Visual inspection, check moisture penetration	All
18	Detergent & rinse aid dosing	- Check function - Check dosing level	All
19	Detergent & Rinse aid hoses	- Check tightness, especially on interface hose / connection nipple - Exchange all hoses every 2 years	All
20	Chemical sensor for rinse- and detergent agent	- Check switching function	All
21	Drain pump	- Check residual water after drain, if necessary check drain pump (impeller)	All
22	Drain hose	- Visual inspection, exchange by porosity or damaging	All
23	Wash & rinse result	- Performance control	All
24	Softener (if existing)	- Visual inspection, condition, corrosion ect. - Check hardness	All
25	Descale	-Check the deposit of scale in wash tank and booster, descale it promptly.	All
26	If necessary water analysis _____°d (GH); ____°d (KH); ____µS		All
27	Test run		All
28	Wash pump	-Check the leakage of shaft seal. if necessary replace and change shaft seal.	